Original Article

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Public Health Section

A Study on Clinical Empathy among Undergraduate Medical Students: A Cross-sectional Study from Malappuram District, Kerala, India

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ABSTRACT

Introduction: Mercer and Reynolds defined empathy as the ability to understand the patient's situation, perspective, and feelings, communicate that understanding, check its accuracy, and act on that understanding with the patient in a helpful way. Clinical empathy is shown to boost patient's feelings of satisfaction, which helps with compliance. The results of earlier research have been mostly contradictory, with some studies demonstrating an increase in empathy and others showing no change or a decline.

Aim: To assess clinical empathy among medical students and to study the associated factors with it.

Materials and Methods: A cross-sectional study was conducted in the Department of Community Medicine, MES Medical College, Perinthalmanna, Malappuram, Kerala, India, over a duration of four months from December 2018 to April 2019. The english version of Jefferson Scale of Empathy-S questionnaire (JSE-S) was used to assess clinical empathy. The JSE is a self-administered inventory that contains 20 questions, half of which were negatively phrased, while the other half were positively phrased. The students were asked to mark one out of seven options provided on a Likert scale in response to each item. The scale was reversed for negatively phrased items. Permission to use the questionnaire was obtained. The data collected were coded and entered into MS Excel and analysed using Statistical Package for Social Sciences (SPSS) version 23.0. Baseline characteristics of the study subjects were explained in terms of frequency, percentage, mean and SD. Appropriate statistical techniques including t-test and Analysis of Variance (ANOVA) were applied to compare the means of two independent groups and more than two independent groups respectively. Pearson's correlation test was applied to study the relation between two quantitative variables, age and empathy score. A p-value <0.05 was considered statistically significant.

Results: The mean age of the study population was 21.36±1.54 years. A total of 360 participants, 263 (73%) were females, 251 (69.7%) of the study subjects were in the age group of 21 to 23 years. A total of 189 (52.5%) of the study participants chose people oriented specialty. The total mean JSE-S empathy score was 105.8±18.5. There was a statistically significant difference (p<0.001) in mean empathy scores among different age groups, gender and the academic year.

Conclusion: Importance should be given to encourage every single individual from the primary level of understanding to matured state of mind to become empathetic. Clinical empathy should be nurtured starting from the commencement of the Bachelor of Medicine and Bachelor of Surgery (MBBS) curriculum and beyond.

Keywords: Empathy scores, Jefferson scale of empathy, Patients satisfaction

INTRODUCTION

Empathy is one of the key components of professionalism in medicine and the most commonly acknowledged personal quality of the humanistic physician [1,2]. An empathic physician can help increase patient satisfaction, improve clinical outcomes, and also help lower burnout [3]. As important as, their clinical competence might be, it is equally important to understand the factors influencing the empathy of tomorrow's health professionals. Clinical empathy is sufficiently difficult to assess, as difficult as it is to enhance it. It has been proven that, inculcating communication skills in the medical education curriculum fosters empathetic behaviour. Medical education research focuses on cognitive and affective domains of empathy while the moral dimension is largely ignored [4]. Empathic behaviour toward another person has also been the focus of attention. According to neurological research, the brain's regions responsible for pain perception are impacted when people witness another person's suffering [5]. Few researches have examined these potentially harmful consequences of empathy on medical professionals like physicians or medical students [5-7].

There is a disconcerting conceptual overlap between the notion of empathy and concepts like patient centeredness, shared decision making, therapeutic partnership, and patient satisfaction since, the word empathy is applied to so many distinct behaviours, feelings, and attitudes. The authors may better understand expectations surrounding behavioural interactions that have a direct impact on the experience of patients and physicians by acquiring conceptual clarity on how the term is being used by frontline stakeholders [8]. Evidence indicates that, most medical students enter medical college with higher levels of empathy. However, it has been observed that, empathy drastically decreases over the academic course period. The specific underlying causes of this reduction are unclear, and many factors probably contribute. A curriculum that encourages the objectification of the patient, an increase in workload, poor treatment by supervisors, and a lack of emotional support can be blamed for the decline. High levels of personal suffering, sadness, anxiety, and burnout have all been proven to diminish empathy in medical students [9].

Studies exploring the clinical empathy of undergraduate medical students of India are scarce, particularly in the South Indian state of Kerala [10,11]. Such studies can reiterate the importance of incorporating caregiving as an integral part of the medical college curriculum by stressing on doctor-patient communication skills.

The results of previous literature have been largely inconsistent, with few showing an increase [12], while some showed no change [13] or a decrease in empathy levels [14]. Hence, the present study was done to assess the clinical empathy among undergraduate medical students in MES Medical College and Hospital, and also to evaluate the factors associated with clinical empathy in the study subjects.

MATERIALS AND METHODS

A cross-sectional study was conducted in the Department of Community Medicine, MES Medical College, Perinthalmanna, Malappuram, Kerala, India, over a period of four months from December 2018 to April 2019. The study was approved by the Institutional Ethics Committee of MES Medical College, Malappuram. IEC/MES/58/2018 (dated 20/12/2018). Data was collected from participants over a period of two months using self-administered questionnaires after explaining the study purpose and taking the written informed consent.

Sample size calculation: Convenient sampling was followed to obtain the required number of study participants. Sample size was calculated using the formula $4SD^2/d^2$ where Standard Deviation (SD) [15]=19.2 and d=2%. The sample size obtained was 354 rounded to 360 study subjects.

Inclusion criteria: A total of 360 MBBS students of a private medical college in Malappuram district of Kerala were included in the study.

Exclusion criteria: Those who did not give consent were excluded in the study.

Study Procedure

The questionnaire was distributed at the end of the lecture, students were asked to complete and return it right away. Students who could not be contacted in the lecture halls were contacted personally. Variables such as age, gender, year of study and the specialty they were interested in were studied. The english version of JSE-S was used to assess clinical empathy [16]. Permission to use the questionnaire was obtained before the commencement of the study. The JSE is a self-administered inventory that contains 20 questions, half of which are negatively phrased, while the other half were positively phrased. One of the seven options provided on a Likert scale in response to each item should be marked. The scale was reversed for negatively phrased items. Empathy according to JSE-S scoring: In males, cut-off for low and high scores were ≤96 and ≥127 respectively. In females, low and high cut-off scores were ≤102 and ≥129, respectively. Internal consistency of the questionnaire was analysed by means of Cronbach's alpha coefficient was 0.82 for the overall measure [17].

STATISTICAL ANALYSIS

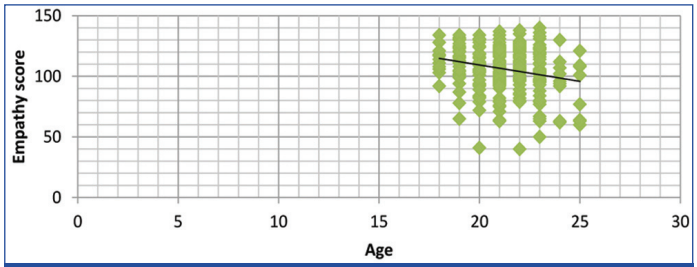
The data obtained was coded and entered in Microsoft Excel sheet and analysed using the SPSS version 23.0. Baseline characteristics of the study subjects were explained in terms of frequency, percentage, mean and SD. Appropriate statistical techniques like independent t-test was applied to compare the mean empathy scores with gender. ANOVA test was used to compare the mean empathy scores of different age groups, academic year and choice of specialty. Pearson's correlation test was applied to study the relation between two quantitative variables like age and empathy score. The p-value <0.05 was considered to be statistically significant.

RESULTS

A total of 360 participants, the majority were in the age group of 21-23 years. The mean age of the study population was 21.36±1.54. 263 (73%) of the study subjects were females. More than half 189 (52.5%) chose people oriented specialty [Table/Fig-1]. A negative correlation was observed between empathy score and age [Table/Fig-2], and this was found to be statistically significant (r=-0.225; p<0.001). The mean JSE-S score was 105.77±18.5. Students in the age group ≥24 years were observed to have lower empathy scores (89.00±22.12) compared to students in the age group of 18-20 years (108.73±18.44). The difference between the mean score of different age groups was statistically significant.

Demographic variables		Frequency (n)	Percentage (%)
Age group (years)	18-20	86	23.9
	21-23	251	69.7
	≥24	23	6.4
Gender	Females	263	73.1
	Males	97	26.9
Academic year	1	80	22.2
	2	76	21.1
	3	142	39.4
	4	62	17.2
Choice of speciality	People oriented	189	52.5
	Technology oriented	82	22.8
	Others/undecided	89	24.7

[Table/Fig-1]: Demographic distribution of the study subjects N=360 .



[Table/Fig-2]: Correlation between age and empathy score of the study subjects.

In the present study, there was significant difference (p<0.001) in empathy scores between males and females with latter scoring more than male students. Students in their first year were having higher empathy scores (111.30±14.965) compared to fourth year (98.13±23.415) students (p<0.001). The difference between the mean score of different years was statistically significant (p<0.001). There was no difference in the mean empathy scores according to their future choice of specialty [Table/Fig-3].

Demographic variables		n	Mean±Std. deviation	p-value
Age (years)	18-20	86	108.73±18.443	<0.001*
	21-23	251	106.29±17.421	
	≥24	23	89.00±22.122	
Gender	Female	263	108.43±18.1	<0.001**
	Male	97	98.56±17.708	
Academic year	1	80	111.30±14.965	<0.001*
	2	76	102.57±19.777	
	3	142	107.70±15.755	
	4	62	98.13±23.415	
Choice of speciality	People oriented	189	106.08±17.794	0.91
	Technology oriented	82	105.04±16.053	
	Others/undecided	89	105.76±21.9	

[Table/Fig-3]: Comparison of the mean empathy scores with demographic variables of the study participants.
*ANOVA
**t-test

DISCUSSION

Research focused on clinical empathy among students is uncommon in Kerala. Hence, the present study was done to get an understanding of the clinical empathy levels and the associated factors among undergraduate medical students of a private medical college in Northern Kerala. The mean JSE-S score was 105.77±18.5. The empathy scores were significantly lower in the study subjects as their age and academic year advanced. Females were significantly empathetic when compared to males. There was no difference in the empathy scores according to their future choice of specialty.

The mean empathy score was higher (105.77±18.498) when compared to studies done by Chatterjee A et al., (96.01±14.56) and Vinay KM et al., (99.25±13.81) [18,19]. A study done in Portugal found that, the empathy levels increased slightly over the academic years, but the difference was not found to be statistically different [20]. A study done by Shashikumar R et al., revealed highest empathy at the entry level which reduced significantly by the seventh semester (p-value=0.002) [15]. This finding was similar to the present study in which empathy levels was highest at the start of the course and fell through the academic years, with the lowest mean score noted at fourth year (p<0.001). Decline in empathy was noted with increasing age, in the present study (p<0.001), while previous studies showed no statistical difference [18]. Empathy scores were higher in the age group of less than 22 years when compared to those in the older age group in the pretest section of a quasi-experimental study done by Srivastava AK et al., [21]. In the present study, females had significantly higher mean empathy scores (p<0.001) when compared to males. This finding was in concurrence with previous literature. A study done in Nagpur found female students to be more empathetic when compared to male students (p<0.05) [19]. Significant gender differences were noted in the JSE scores in studies done by Hojat M and Mirani SH et al., [22,23]. A study done by Antony A et al., found similar significant gender differences [10]. Several possible reasons for gender disparity including greater capacity for social relationship, social learning, cultural values, human evolution history, constitutional disposition, hormonal and biophysiological factors are mentioned in a review article by the same author [22]. Similar to the present study, Shashikumar R et al., and Chatterjee A et al.,found no significant difference in the empathy score according to their choice of specialty [15,18]. However, Mirani SH et al., found significant differences in empathy score between those who chose people oriented specialty as their future preference when compared to those who chose technology oriented or remained undecided [23]. A systematic review of 30 studies by Andersen FA et al., found 14 studies to have reported significantly lower empathy levels with increase in number of educational years. In the same review, 18 out of 27 studies reported females to have higher empathy scores than males. Empathy scores were found to have an association with specialty preferences in only three out of nine studies [24].

A study done by Sebastian SR et al., which employed Interpersonal Reactivity Index (IRI) for measuring empathy found age, educational status and presence of burnout to be significantly associated with empathy [11]. Since erosion of empathy over the academic years has been established, next focus should be on enhancing empathy levels of the medical undergraduate students. Further research will be needed to completely understand the factors behind gender differences in empathy levels.

Limitation(s)

Due to the short duration of the study, it was not possible to include all the semesters and students. Due to the cross-sectional nature of the study, the progression of empathy level of the students over the years could not be assessed in entirety.

CONCLUSION(S)

The present study found significant difference in clinical empathy levels among the medical undergraduates with respect to age, gender and academic year, and also a negative correlation between empathy score and age. Clinical empathy remains difficult to assess in totality even with many empathy scales in use. These scales including the JSE-S can reflect the cognitive component of empathy but not the affective component. However, the assessment tools can help educators to prevent the erosion of empathy in the students to a certain extent. Qualitative research might shed a different light on the topic of empathy among undergraduates. Integration of empathy as a longitudinal theme throughout the course should be considered. The new Competency-Based Medical Education (CBME) curriculum has introduced Attitude, Ethics, and Communication (AETCOM) sessions, which include initiatives to improve empathy in medical students.

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